

DETAILED ACTION

- Applicant's Amendment filed February 8, 2008 is acknowledged.
- **Claims 1, 7, 9, 20 and 31** were amended.
- Amendment to Abstract is acknowledged.
- Amendment to Claim Objections is acknowledged.
- Amendment to Claim Rejections is acknowledged.
- Examiner's Rejection to **Claims 1-31** is not withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-31 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada (Patent No.: US 7,133,387 B2) in view of Hieda et al. (Patent Number: 5,592,483).

Regarding Claim 1, Nakada discloses a wireless communication system operating without a base station and including (Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56) a plurality of communication apparatuses (Figs. 1A and 1B, mobile communications system with communication terminals 2, 3 and 4, column 3, lines 40-42) associated with respective communication areas, the system comprising:

an information transmission source communication apparatus (Fig. 6, 44, transmission unit) for forming a data packet by inserting a preamble signal (Fig. 5, 28, preamble signal) into each transmission data and transmitting the formed data packet (Fig. 6, transmission unit 44 modulates and transmits preamble packets and data generated by downstream signal generation unit 45, column 1, lines 41-44) to one or more of the communication apparatuses that are located within the communication area of the transmission source communication apparatus; and

a communication apparatus located within the communication area of the transmission source communication apparatus and not currently communicating for recognizing that the transmission path is used for a predetermined interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) from a time (time period of the preamble signal, column 4, lines 36-37) when the preamble signal is detected.

Nakada teaches all the limitations of claims including a wireless communication system, a plurality of communication apparatuses and a preamble signal. But, Nakada fails to specifically teach a communication system without a base station.

However, Hieda et al. teaches in Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Hieda et al.'s Fig. 16 as the communication system without a base station because this would have allowed apparatus A to obtain access rights to the media and transmit the contents of a data packet to apparatus B, column 2, lines 13-16.

Regarding Claim 2, Nakada discloses the wireless communication system as claimed in claim 1, wherein

the information transmission source communication apparatus forms the data packet at a predetermined time unit (Fig. 2, 16, delay memory unit), and further comprising:

an information reception target communication apparatus (Fig. 2, 15, code generation unit 15) for generating acknowledge (ACK) information in response to the success in correctly receiving the data and for generating not acknowledge (NACK) information (Fig. 2, 15, code generation unit 15 generates ACK signal or NACK signal on the basis of the output from the preamble determination unit 14, column 4, lines 32-34; Fig. 3) in response to a failure in correctly receiving the data (Fig. 2, 14, preamble determination unit 14 determines whether a preamble was received or not (failure), column 4, lines 23-24), forms an ACK (Fig. 3, ACK

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signal 8 for allowing to use the message part is transmitted for preamble signal 6, column 4, lines 65-66) or NACK packet to which a preamble signal is inserted, and returns it, just after the reception of the data packet (Fig. 3, S26, message part available at terminal 3, column 4, line 67);

said information transmission source communication apparatus retransmits the data packet of said predetermined time unit in response to the reception of the NACK packet (Fig. 3, NACK signal 7 for rejecting to use the message part is transmitted for preamble signal 5 at terminal 2, column 5, lines 1-2); and

said communication apparatus not currently communicating recognizes a use of the transmission path for retransmission (terminal 3 which is allowed to use the message part can now transmit and receive data, column 5, line 4-6) based on the reception of the preamble signal for a period (time period of the preamble signal, column 4, lines 36-37) from the detection of the NACK packet to detection of the next ACK packet.

Regarding Claim 3, Nakada discloses the wireless communication system as claimed in claim 2, wherein

other communication apparatuses not currently communicating (Fig. 3, terminal 3) recognize the termination of the use of the transmission path (Fig. 3, S26, message part available) when the ACK packet cannot be detected (Fig. 3, ACK 11) based on the detection of the preamble signal (Fig. 5, 28, preamble signal) until a predetermined elapsed time (prescribed delay time period of the preamble signal for NACK, column 4, lines 36-37) from when the NACK packet is received (Fig. 3, NACK 12).

Regarding Claim 4, Nakada discloses the wireless communication system as claimed in claim 2, wherein

the information reception target communication apparatus adds the preamble signal to a top (control signal of which the header designates a base station, column 1, lines 24-25) of a beacon signal (base station transmits a free channel signal (beacon signal) for allowing the mobile station to transmit the control signal and an identifier for the base station, column 1, lines 25-27) describing information regarding a communication apparatus (mobile station, column 1, line 23) of which transmission is permitted with priority (data items from the communications terminals are determined and priorities are setup, column 1, lines 38-40), and transmits the beacon signal;

the communication apparatus specified by the beacon signal transmits a predetermined unit of data packet (data items from the communication terminals are determined and two-step priorities are set up on the basis of the determination result, column 1, lines 38-40) when there is data to be transmitted to said information reception target apparatus; and

other communication apparatuses (Fig.3, terminal 4) not currently communicating recognize based on the detection of the preamble signal the use of the transmission path for the time interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) corresponding to the packet length (communication terminal 30 receives the down stream standard signal which is as long as the preamble, column 1, lines 45-49) from when said beacon signal is received.

Regarding Claim 5, Nakada discloses the wireless communication system as claimed in claim 2, wherein

said information transmission source communication apparatus transmits a transmission request packet (RTS) into which the preamble signal is inserted when no preamble signal is detected for a predetermined time interval (prescribed delay time period of the preamble signal, column 4, lines 36-37); and

said information reception target communication apparatus returns a confirmation notice packet (CTS) (data packet is confirmed, column 1, line 36) in response to the reception of a transmission request packet (RTS) (packet with preamble and data is modulated by a short period, column 1, lines 64-65).

Regarding Claim 6, Nakada discloses the wireless communication system as claimed in claim 5, wherein

said other communication apparatus not currently communicating recognizes based on the detection of the preamble signal the use of the transmission path from when the NACK packet is detected (Fig. 3, NACK 12), during a predetermined interval (Fig. 3, interval between NACK 12 and ACK 11) from the reception of the confirmation notice (CTS) packet (data packet is confirmed, column 1, line 36), to when the next ACK packet is detected (Fig. 3, ACK 11).

Regarding Claim 7, Nakada discloses the wireless communication system as claimed in claim 5, wherein

said information source communication apparatus makes the data packet include therein an element (channel number for a data packet, column 1, lines 35-36) of the transmission request (RTS) for a next data packet transmission (channel allocation is controlled and data items are determined for competitive (transmitting) terminals, column 1, lines 36-39) when transmission data exists.

Regarding Claim 8, Nakada discloses the wireless communication system as claimed in claim 5, wherein

said information reception target communication apparatus makes the ACK packet or the NACK packet corresponding to the received data packet include an element of confirmation notice (CTS).

Regarding Claims 9 and 20 Nakada discloses a wireless communication apparatus (Figs. 1A and 1B, terminals 2, 3, 4) and method (method for channel access, column 1, lines 7-8) operating within a communication system not having a base station (Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56) and including a plurality of communication apparatuses (Figs. 1A and 1B, mobile communications system with communication terminals 2, 3 and 4, column 3, lines 40-42) associated with respective communication areas, comprising:

buffer means (Fig. 2, 16, delay memory unit) for dividing transmission data by a predetermined unit (Fig. 2, 14, preamble determination unit for determining whether or not to transmit signals, column 3, lines 3-5);

transmission data processing means (Fig. 2, 13, correlation unit) for adding a predetermined preamble signal (calculates correlations between prescribed preamble signals, column 4, lines 6-8) to divided transmission data from the buffer means to form a transmission packet (preamble packets and data generated by downstream signal generation unit 45, column 1, lines 42-44);

preamble detection means (Fig. 2, 14) for detecting a preamble signal (determines whether a preamble was received, column 4, line 23-24) on a transmission path (Fig. 5, RACH, random access channel); and

transmission means (Fig. 6, 44) for transmitting the formed packet when no preamble signal is detected for a predetermined interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) at said preamble detection means, the formed packet being transmitted to one or more communication apparatuses (Figs. 1A and 1B, terminals 2, 3, 4) within the communication area of the communication apparatus transmitting the packet,

whereby a communication apparatus (Fig. 1A, terminal 2) located within the communication area of the communication apparatus transmitting the packet and not currently communicating recognizes that the transmission path (Fig. 5, RACH, random access channel) is used for a predetermined interval from a time when the preamble signal is detected (determines whether a preamble was received, column 4, line 23-24).

Nakada teaches all the limitations of claims including a wireless communication system, a plurality of communication apparatuses and a preamble signal. But, Nakada fails to specifically teach a communication system without a base station.

However, Hieda et al. teaches in Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Hieda et al.'s Fig. 16 as the communication system without a base station because this would have allowed apparatus A to obtain access rights to the media and transmit the contents of a data packet to apparatus B, column 2, lines 13-16.

Regarding Claims 10 and 21, Nakada discloses the wireless communication apparatus and method, further comprising:

reception means (Fig. 6, 33, receiving unit) for receiving a signal added to the preamble signal (preamble signal and transmission data, column 2, lines 65-66) in response to the detection of the preamble signal; and

reception data processing means (Fig. 3, base station 1) for analyzing the signal (transmitter/receiver in the base station analyses the signal sequence of the preamble, column 3, lines 59-62) received by said reception means.

Regarding Claims 11 and 22, Nakada discloses the wireless communication apparatus and method, wherein

said reception data processing means generates acknowledge (ACK) information (Fig. 3, ACK 8) in response to correctly receiving a for-own-station data (transmission data, column 2, line 66) and not acknowledge (NACK) information (Fig. 3, NAK 7) in response to incorrectly receiving the for-own-station data;

said transmission data processing means forms an ACK packet (Fig. 3, ACK 11) or an NACK packet (Fig. 3, NACK 12) into which a preamble signal (preamble signal, column 2, line 65) is inserted; and

said transmission means transmits the ACK packet (Fig. 3, ACK 11) or the NACK packet (Fig. 3, NACK 12) just after the reception of the data.

Regarding Claims 12 and 23, Nakada discloses the wireless communication apparatus and method, wherein

upon not currently communicating (the base station stops transmitting knowing immediately that the mobile station is in its zone, column 1, lines 29-31), said reception data processing means recognizes use of the transmission path for the data retransmission from when the NACK packet is detected to when the next ACK packet is detected.

Regarding Claims 13 and 24, Nakada discloses the wireless communication apparatus and method, wherein

said reception data processing means recognizes a termination of use (the base station stops transmitting knowing immediately that the mobile station is in its zone, column 1, lines 29-31) of the transmission path when no ACK packet (Fig. 3, ACK 11) is detected until a predetermined interval (prescribed delay time period of the preamble signal for NACK, column 4, lines 36-37) has elapsed from when the NACK packet (Fig. 3, NACK 12) is received.

Regarding Claims 14 and 25, Nakada discloses the wireless communication apparatus and method, wherein

said transmission data processing means generates a beacon signal (base station transmits a free channel signal (beacon signal) for allowing the mobile station to transmit the control signal and an identifier for the base station, column 1, lines 25-27) describing information regarding a communication apparatus (mobile station, column 1, line 23) from which transmission is permitted with priority (data items from the communications terminals are determined and priorities are setup, column 1, lines 38-40); and

said reception data processing means analyzes (transmitter/receiver in the base station analyses the signal sequence of the preamble, column 3, lines 59-62) whether the transmission of its own station (preamble signal and transmission data, column 2, lines 65-66) is permitted with priority by analyzing (transmitter/receiver in the base station analyses the signal sequence of the preamble, column 3, lines 59-62) the beacon signal.

Regarding Claims 15 and 26, Nakada discloses the wireless communication apparatus and method, wherein

upon not currently communicating (the base station stops transmitting knowing immediately that the mobile station is in its zone, column 1, lines 29-31), said reception data processing means recognizes use of a transmission path (Fig. 5, RACH) for a time interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) corresponding to the packet length (communication terminal 30 receives the down stream standard signal which is as long as the preamble, column 1, lines 45-49) from when the beacon signal is received.

Regarding Claims 16 and 27, Nakada discloses the wireless communication apparatus and method, wherein

said transmission data processing means generates a transmission request (RTS) packet (packet with preamble and data is modulated by a short period, column 1, lines 64-65) for a data transmission target (Fig.3, terminal 4);

and in response to reception of the transmission request (RTS) packet from another communication apparatus (Fig.3, terminal 4) by said reception processing means, said transmission data processing means generates a confirmation notice (CTS) packet (data packet is confirmed, column 1, line 36).

Regarding Claims 17 and 28, Nakada discloses the wireless communication apparatus and method, wherein

upon not currently communicating (the base station stops transmitting knowing immediately that the mobile station is in its zone, column 1, lines 29-31), said reception data processing means recognizes use of a transmission path (Fig. 5, RACH) from when a not

acknowledge (NACK) packet (Fig. 3, NACK 12) is detected, during a predetermined interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) from the reception of the confirmation notice (CTS) packet (data packet is confirmed, column 1, line 36), to when a next acknowledge (ACK) packet (Fig. 3, ACK 11) is detected.

Regarding Claims 18 and 29, Nakada discloses the wireless communication apparatus and method, wherein

said transmission data processing means makes the data packet include therein an element (channel number for a data packet, column 1, lines 35-36) of the transmission request (RTS) for a next data packet transmission (channel allocation is controlled and data items are determined for competitive (transmitting) terminals, column 1, lines 36-39) when a following transmission data (transmission data, column 2, line 66) exists.

Regarding Claims 19 and 30, Nakada discloses the wireless communication apparatus and method, characterized in that:

said transmission data processing means makes an acknowledge (ACK) packet (Fig. 3, ACK 11) or a not acknowledge (NACK) packet (Fig. 3, NACK 12) corresponding to the received data packet include an element (channel number for a data packet, column 1, lines 35-36) of the confirmation notice (CTS) (data packet is confirmed, column 1, line 36) therein.

Regarding Claim 31, Nakada discloses a computer-readable medium (Fig. 4, flow chart) containing computer-executable instructions to perform a wireless communication method

(method for channel access, column 1, lines 7-8) in a communication system not having a base station and including (Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56) a plurality of communication apparatuses (Figs. 1A and 1B, mobile communications system with communication terminals 2, 3 and 4, column 3, lines 40-42) associated with respective communication areas, the method comprising:

- a buffering step (Fig. 4, S13), for dividing transmission data by a predetermined unit (Fig. 2, 14);

- a transmission data processing step (Fig. 4, S12), for adding a predetermined preamble signal (calculates correlations between prescribed preamble signals, column 4, lines 6-8) to divided data from the buffering step to form a transmission packet (preamble packets and data generated by downstream signal generation unit 45, column 1, lines 42-44);

- a preamble detection step (Fig. 4, S15), for detecting a preamble signal (determines whether a preamble was received, column 4, line 23-24) on a transmission path (Fig. 5, RACH, random access channel);

- a transmission step (Fig. 4, S17) for transmitting the formed transmission packet when no preamble signal is detected at said preamble detection means for a predetermined interval (prescribed delay time period of the preamble signal, column 4, lines 36-37), the formed packet being transmitted to one or more communication apparatuses (Figs. 1A and 1B, terminals 2, 3, 4) within the communication area of the communication apparatus transmitting the packet;

a reception step (Fig. 4, S11) for receiving the signal added to the preamble signal (preamble signal and transmission data, column 2, lines 65-66) in response to the detection of the preamble signal; and

a reception data processing step (Fig. 4, S12) for analyzing (transmitter/receiver in the base station analyses the signal sequence of the preamble, column 3, lines 59-62) the information received in said reception step,

whereby a communication apparatus (Fig. 1A, terminal 2) located within the communication area of the communication apparatus transmitting the packet and not currently communicating recognizes that the transmission path (Fig. 5, RACH, random access channel) is used for a predetermined interval from a time when the preamble signal is detected.

Regarding Claim 31, Nakada teaches all the limitations of claims including a wireless communication system, a plurality of communication apparatuses and a preamble signal. But, Nakada fails to specifically teach a communication system without a base station.

However, Hieda et al. teaches in Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Hieda et al.'s Fig. 16 as the communication system without a base station because this would have allowed apparatus A to obtain access rights to the media and transmit the contents of a data packet to apparatus B, column 2, lines 13-16.

Citation of Pertinent Prior Art

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mayor et al. (Patent No.: US 6,859,463 B1) discloses methods and apparatus for organizing selection of operational parameters in a communication system.

Response to Arguments

3. Applicant's arguments filed February 8, 2008 have been fully considered, but they are not persuasive.

- In the remarks on page 15 of the amendment, applicant contends that as recited in claim 1, Nakada does not disclose operation without a base station. Also, since independent claims 9, 20 and 31 include limitations similar to those in claim 1, these claims are patentable over Nakada for at least the same reasons as discussed in claim 1. Further, applicant submits that dependent claims 2-8, 10-19 and 21-30 are patentable for least the same reasons as their base claims 1, 9 and 20, and all of the claims are now in condition for allowance.
- The examiner respectfully contends that Hieda et al. discloses operation without a base station in Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56 as recited in claim 1, a wireless communication system operating without a base station and including (Fig. 16, wireless system network apparatus, column 1, line 46; transmission and reception of a packet

when apparatus A transmits data to apparatus B which shares the media with apparatus A, column 1, lines 54-56) a plurality of communication apparatuses (Figs. 1A and 1B, mobile communications system with communication terminals 2, 3 and 4, column 3, lines 40-42) associated with respective communication areas, the system comprising: an information transmission source communication apparatus (Fig. 6, 44, transmission unit) for forming a data packet by inserting a preamble signal (Fig. 5, 28, preamble signal) into each transmission data and transmitting the formed data packet (Fig. 6, transmission unit 44 modulates and transmits preamble packets and data generated by downstream signal generation unit 45, column 1, lines 41-44) to one or more of the communication apparatuses that are located within the communication area of the transmission source communication apparatus; and a communication apparatus located within the communication area of the transmission source communication apparatus and not currently communicating for recognizing that the transmission path is used for a predetermined interval (prescribed delay time period of the preamble signal, column 4, lines 36-37) from a time (time period of the preamble signal, column 4, lines 36-37) when the preamble signal is detected. And, since independent claims 9, 20 and 21 include limitations similar to those in claim 1, these claims are not patentable for at least the same reasons discussed in claim 1. Further, dependent claims 2-8, 10-19 and 21-30 are not patentable for at least the same reasons as their base claims 1, 9 and 20, and all of the claims are not allowable.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Andrews whose telephone number is (571) 270-1801. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rao S. Seema can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/

Supervisory Patent Examiner, Art Unit
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